

**GOVERNOR'S OFFICE OF EMERGENCY SERVICES**

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November 2003

TO: **LAW ENFORCEMENT ADMINISTRATORS
TELECOMMUNICATIONS MANAGERS**

This is an updated version of the CLEMARS Plan. This version incorporates minor editorial revisions to the Plan since the last major rewrite in 1990, **and includes revised application forms**. This update is being promulgated to assist CLEMARS participants to update their existing records in anticipation of the Federal Communications Commission (FCC)'s implementation of narrower bandwidth channels starting in 2004.

In the last few years the paradigms of Public Safety Communications have changed throughout the United States. California's models of Mutual Aid Communications systems like CLEMARS have been recognized by a number of Federal Advisory Committees, and have become the foundation for the FCC's new rules regarding Interoperability. Additionally, as the technology involved in law enforcement communications changes, the California Law Enforcement Mutual Aid Radio System must also change. Interoperability among all First Responder personnel is now the national goal.

With this in mind, OES is convening the **California Statewide Interoperability Executive Committee (CALSIEC)** to develop a new comprehensive **Statewide Interoperability Communications Plan**. CALSIEC is an all-discipline Committee, modeled after (and replacing) the CLEMARS Executive Committee. The *Plan* will incorporate the basics of CLEMARS (as we now know it), adapting those concepts to meet the new demands. As the new *Plan* is developed and implemented, CLEMARS will evolve into a system that will be compatible and effective in this new technical environment.

As always we seek your input as we continue this process. For information on CLEMARS or CALSIEC, contact the Interoperability Programs Unit in OES Telecommunications on (916) 845.8630, or email INTEROP@OES.CA.GOV.

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CLEMARS Plan **CREDITS**

State Of California
Governor's Office Of Emergency Services

California Law Enforcement Mutual Aid Radio System Plan (CLEMARS)

2003 Editorial Revisions
to the August 1991 Edition.

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CLEMARS INTRODUCTION

CLEMARS is the California Law Enforcement Mutual Aid Radio System. Note that this is indeed a system, not just one channel. It is a logical extension of the law enforcement mutual aid concept. The system is provided and managed by the Governor's Office of Emergency Services (OES). The stated purpose of the system is to enhance the ability for law enforcement agencies to communicate on common frequencies during emergencies and other special operations. A key aspect in the original design was to provide a frequency that would allow agencies from *different* jurisdictions the ability to communicate on common channels. As law enforcement agencies began to move their radio systems to other bands and frequencies, OES expanded the system to include channels in other parts of the frequency spectrum.

Examples of situations wherein use of CLEMARS would be an asset include:

- An interagency team operation designed to serve a search or arrest warrant
- An emergency call requiring two or more units from the same agency to coordinate response to a crime-in-progress
- A mutual aid response team, assigned to assist a neighboring jurisdiction
- Law enforcement operations conducted at a parade, concert or other special event, involving one or more law enforcement agencies
- Operations required in response to a major disaster, involving units from several assisting agencies that come from outside the impacted area
- A transient law enforcement unit enroute to an out-of-town court appearance comes upon an injury collision and requires a local dispatch center within range to relay an assistance request

The provision of common mutual aid channels is not just a statewide responsibility. The Federal Communications Commission [FCC] has designated one VHF high band channel as a *national* law enforcement mutual aid channel. NALEMARS, or the National Law Enforcement Mutual Aid Radio System as it is termed in many states, is one of the channels incorporated into our CLEMARS pool of frequencies. When used, it conceivably gives users the ability to communicate with similarly equipped units from agencies in many parts of the United States.

Implicit in all CLEMARS channels is a common set of operational procedures and priorities. The procedures delineated in this manual ensure operation in a manner permitted by FCC regulations, and in a manner that allows all users to cooperate in the management of an emergency or other special situation requiring coordinated communications.



CLEMARS has been designed to permit use of certain channels for necessary day-to-day operations, provided such use does not interfere with a higher priority need in that, or any neighboring, area.

Observance of restrictions, regulations and adherence to the common set of priorities is mandatory. OES management of the system includes the enforcement of these principles. Violations can result in loss of authorization to use CLEMARS channels.

Conversely, agencies that obtain proper licenses, equip their radios correctly, and train their personnel effectively will realize several important benefits by participating in the system. CLEMARS is another important tool for law enforcement use. When used properly, it can contribute positively to coordinated, interagency public safety efforts.

NATIONAL LAW ENFORCEMENT MUTUAL AID RADIO SYSTEM

There is a nationwide counterpart to CLEMARS, known as NALEMARS. This system, the National Law Enforcement Mutual Aid Radio System consists of one channel, set aside by the FCC as a mutual aid intercommunication channel, similar to our channels here in California. The NALEMARS frequency is 155.475 MHz. NALEMARS is one of the California CLEMARS channels. The application process for authorization is the same as that involved in the other CLEMARS channels.

Note that NALEMARS may not be used for administrative or secondary communications. It is only to be used in emergency or urgent situations.



SYSTEM MANAGEMENT

The ultimate authority for operations on CLEMARS and other related channels rests with the Federal Communications Commission [FCC]. Under their rules for the Public Safety Radio Services, use of these frequencies is subject to coordination and regulation. A copy of this Plan is on file with the FCC. ***The State of California holds all licenses for use of these channels in California.*** As such, the State is responsible for assuring proper utilization and operation, and may, given just cause, revoke authority for local use of the channels. The Governor's Office of Emergency Services manages the system on behalf of the State of California. This responsibility is met by two divisions within OES, and by the CLEMARS Executive Committee.

The CLEMARS Executive Committee advises OES on development, supervision and control of the system. It is chaired by the OES Law Enforcement Branch, and is composed of the following representatives:

- OES Law Enforcement [Chair]
- OES Telecommunications [Executive Secretary]
- Dept. of General Services – Telecommunications
- California Highway Patrol
- Department of Justice
- Municipal Police Representative
- County Sheriff Representative
- APCO Local Frequency Advisor – North*
- APCO Local Frequency Advisor – South*
- Federal Representative
- Member at Large – North
- Member at Large – South

The Chair appoints representatives to the Committee. Members serve for three-year terms, and may be appointed to successive terms. Committee members may be polled by telephone, mail, or may meet at the request of the Chair. A listing of current members is available upon written request to the OES Telecommunications Branch.

The OES Law Enforcement Branch establishes and enforces procedures for participation in, and use of, the system. OES Law Enforcement Coordinators ensure that the system's frequencies are used properly and in a coordinated manner. These peace officers are available to assist local law enforcement agencies with any and all questions regarding use of the system.

The OES Telecommunications Branch is responsible for technical standards and procedures. Their Telecommunications Coordinators can assist and advise on technical matters, as requested.

* Association of Public-Safety Communications Officials, International



As the CLEMARS channels are a component of California's Law Enforcement Mutual Aid System, each law enforcement executive shares a responsibility for system management. In effect, each Police Chief and Sheriff is bound to ensure that applications, licensing and operations on CLEMARS, within that particular law enforcement agency are conducted within regulations and policies set forth in this document. Additionally, Law Enforcement Mutual Aid Regional Coordinators are responsible for system operations within each Mutual Aid Region. However, as stated, the *ultimate* responsibility, as specified by the Federal Communications Commission, rests with the licensee, the State of California.



ELIGIBILITY AND APPLICATION INFORMATION

Participation in CLEMARS is open to all California law enforcement agencies. Included within that context are certain special districts, public educational institutions, Federal law enforcement agencies, and other public entities.

A simple checklist has been included so those agencies seeking authorizations can check their eligibility:

- Is the agency or organization a **bona fide law enforcement entity**, which discharges duties involving peace officer powers?
- Is this agency or organization a **governmental agency**? [Federal, State, local, special district, public educational institution, etc.]
- Has the agency or organization (if a city, county, or state agency) signed the California Master Mutual Aid Agreement? If this is not applicable, will the organization support other law enforcement agencies during emergencies?

If these points are answered affirmatively the application is reviewed for technical compliance consistent with the standards delineated in the Technical Information section in this plan. Only when both reviews have been completed can a license be obtained.

In cases where the application is unclear or incomplete, it will be returned to the sender without consideration, pending proper completion. In cases where some deviation exists, either in terms of technical compliance or eligibility, the request may be held for review by the CLEMARS Executive Committee.

Requests to participate in CLEMARS should be addressed to OES Telecommunications, Post Office Box 419047, Rancho Cordova, CA 95741-9047. Send the appropriate application(s) included in the plan, and include the required frequency coordination fee. After initial review, OES Telecommunications Branch will process applications.

Charges will be levied on all applicant organizations when seeking a new frequency or making a license change, system modification, or any other technical change which requires an official FCC license modification or transaction to take place.



Experience has shown that administrative costs for processing applications change with time. As a result, applicants are encouraged to telephone the Interoperability Programs Unit of OES Telecommunications on (916) 845-8630 for current charges based on the type of application involved.

A check, payable to the California Office of Emergency Services must accompany each local government CLEMARS application. State agencies will be billed directly by the Department of General Services.

Requests are subject to a technical review by the Associated Public-Safety Communications Officers, Inc. [APCO]. APCO is the FCC's Frequency Coordination Agent for the Police Radio Service. Its California Chapters (Northern California Associated Public-Safety Communications Officers [NAPCO] and the California Public-Safety Radio Association [CPRA]) will evaluate requests for the potential of interference to other users on the same channel, and on adjacent frequencies.

Once approved, FCC licenses will be acquired by and in the name of the State of California.



OPERATING PROCEDURES

CLEMARS channels should be considered an open “party line”, to the extent that only one user in a given area can use the system at any one time. As a result, careful attention must be paid to operating procedures. Improper procedures often involve “covering” another agency’s radio transmission. This is not only illegal—it *can endanger peace officer safety*. For this reason, careful adherence to these procedures is mandatory.

General Operations

Agencies generally have an established radio procedure. The same communications “style” applies to CLEMARS. When using the system, units identify the unit or station they wish to speak with, then identify themselves. The message(s) transmitted must be official, as in use of all other police radio systems. At the end of the message sequence, the units switch back to their home radio channel. Note that the channel must be identified per FCC regulations, usually by the base station.

Identification

Mobile units must use their agency-assigned unit designator during transmissions. These should not be shortened, but should include the entire set of letters and/or numbers. For example, a unit that has an agency-assigned call sign of “Sheriff’s 48 Sam” should identify using those very words. “Sam by” is insufficient identification. Likewise, “21 to 62” would be incorrect, if the units’ true designators were “6 Paul 21” and “5 Tom 62”.

An exception would be during interagency operations. In this case, units should add identification to indicate their agency as well, i.e. “Shasta 5201”.

Base stations should identify by using their agency name, along with any other usual identifier. For example, “Control” would not be sufficient identification, and would constitute a violation of proper procedure. More appropriate would be “Visalia Control” or “Tulare Sheriff’s Control”, etc. Again, base stations must also use the FCC call sign shown on their CLEMARS license.

Monitor First

As users must switch to CLEMARS before transmitting, the operator or officer may not be aware of other personnel already using the channel. As such, it is a requirement that personnel monitor the channel prior to transmitting, to minimize the possibility of interference with communications in-progress.



Use of Radio Codes

While there are a few radio codes that almost everyone in law enforcement would understand, many agencies utilize codes that are incompatible with those used in neighboring agencies. While “Code 33” in one agency means “emergency traffic”, an agency a few miles away uses the same radio code to mean “no warrants, past record not checked”. As such, operations on CLEMARS are to be in “clear text”, avoiding the use of radio codes that could cause confusion, and potentially jeopardize officer safety.

Encryption

The use of any CLEMARS channel for transmission of any encoded, encrypted, digital, or scrambled message is prohibited.

Channel Use Priorities

A common system of priorities has been established for CLEMARS channels; it is consistent with the scheme used to prioritize traffic on many other systems. CLEMARS channels will be used *primarily* as a means of coordinating special purpose radio transmissions between and among local, county, State, and in certain cases Federal law enforcement agencies. Its use is specifically indicated when those agencies’ efforts are emergency, urgent, and/or special event conditions.

There are priority levels **common throughout the system**. In each case, traffic of a higher priority level must be given use of the channel, with agencies utilizing it for lower priority traffic yielding the frequency immediately.

- | | |
|-------------|--|
| Priority 1 | Disaster and extreme emergency operations for mutual aid and interagency communications |
| Priority 2 | Emergency or urgent operations involving imminent danger to the safety of life or property |
| Priority 3 | Special event control activities, generally of a per-planned nature, and generally involving joint participation of two or more agencies |
| Priority 3a | Drills, tests and exercises |
| Priority 4 | Single agency secondary communications |



Priority Traffic

Agencies having need to “clear” the channel for use in high priority situations should use clear text to do so. Examples of the appropriate phrases are:

“Alhambra PD has emergency traffic on CLEMARS”

“All units and stations, Madera County has Priority 1 traffic on CLEMARS”

Use of codes may not ensure a clear frequency for your use, as each agency tends to interpret codes differently. Similarly, use clear text phrases to resume normal operations on CLEMARS. Some examples:

“Resume normal operations on CLEMARS – Alameda Sheriff KTE 644”

“All units, CLEMARS is no longer restricted for Sunnyvale PD”

On occasion, misunderstandings have occurred, again due to use of codes to return the channel to normal condition. Use of common terms such as those above should minimize this possibility. Agencies must inform other area user agencies when they are involved in high priority usage of CLEMARS channels. Such notification should be via several of these four forms:

- A broadcast should be made on CLEMARS
- Teletype message to adjoining CLEMARS users. Agencies may wish to utilize the California Law Enforcement Telecommunications System [CLETS] “User Group Notification” feature.
- California Law Enforcement Radio System [CLERS] notification (via point-to-point radio system)
- Telephone calls to area frequent users

In all cases where a teletype is sent, a courtesy copy to mnemonic “OES” in Sacramento is appreciated [See the annex section of this Plan for a sample CLETS announcement.]

In cases where two or more agencies in close proximity request a similar priority level clearance for simultaneous operations, the OES Law Enforcement Branch should be contacted for advice.

Local Agency Use for Secondary Communications

Use of some CLEMARS channels is permitted for (administrative) local agency communications, defined in the Plan as Priority 4. This notwithstanding, the intent of the State is to preserve these channels *for use in emergencies, particularly those involving multiple agencies.*



In the absence of the above situations the frequencies may be used for day-to-day communications as a local agency secondary channel.. (Such use may be interpreted as communications of a “routine” nature, similar to those that might be conducted on an agency’s primary channel.) *There are specific limitations relative to such use:*

- Use must still conform to proper operating procedure and proper use of identification, call signs, etc.
- Agencies considering use of the channel for such traffic must first monitor the channel to ensure that no higher-priority communications are being conducted on CLEMARS.

Message Content

When using these channels, remember that they are for official use only. While it is perfectly permissible to use CLEMARS to arrange meetings between field units, transportation of equipment or other items, etc., personnel are not permitted to engage in discussions regarding choice of restaurants, items to order for station personnel, etc. Even with modern communications equipment available, some arrangements should be made through a telephone call. Again, the intent is to preserve the availability of a set of mutual aid channels for instantaneous *emergency* use.

Out-of-Area/Itinerant Mobiles

Base stations are encouraged to monitor CLEMARS channels at all times. Law enforcement units travel throughout the state on out-of-area duties such as prisoner transport, court appearance and training-related travel. Often these units have no other ready means with which to notify law enforcement agencies as to traffic collisions, fires or other hazards. CLEMARS channels can fill this need when diligently monitored by base stations throughout the state. Law enforcement personnel on travel status should consider using CLEMARS OR NALEMARS to notify local law enforcement agencies when emergencies come to their attention. A phrase similar to: “Any car or station on CLEMARS (or NALEMARS), this is [unit ID] with emergency traffic” could be used to hail a base station. NALEMARS is particularly useful in this regard, as the lack of Priority 4 traffic means that more agencies might monitor this channel.

Supervisory Responsibility

Each agency manager and supervisor bears the responsibility for proper operation within that agency. When violations are noted, OES will contact agency executives to assist in correcting problems or deficiencies.



800 MHz CLEMARS CHANNELS

This frequency band includes nationwide calling, tactical and CLEMARS channels, available for use by local law enforcement agencies. Again, the State of California holds the licenses, with authority being granted to local agencies after proper application and review. Given the complex nature of spectrum planning in this band, the regulations for use of these channels are somewhat different than licensing for other CLEMARS channels.

In granting approval for use of frequencies in this band, the FCC required the State to utilize county/operational area planning to ensure coordinated use of the spectrum available. This translates to the need for each operational area or county to develop a coordinated plan for use of the common 800 MHz frequencies. The State is developing an 800 MHz Mutual Aid Radio information guide, which will delineate specific requirements for such a plan.

NOT included within the scope of the CLEMARS Plan are the 800 MHz Nationwide Calling and Tactical Channels. These are available to all public safety agencies, but are not law enforcement-specific.

Generally speaking, to obtain license authorization for use of 800 MHz CLEMARS, an agency must submit to OES a CLEMARS application and an attached statement certifying compliance with the area's Regional 800 MHz Implementation Plan.

Applications that include a request for stations in the 800 MHz spectrum will be subject to review by the appropriate 800 MHz Advisory Committee, in addition to other reviews. This is necessary due to stringent FCC requirements mandating coordination and compliance with previously approved 800 MHz Plans.

Note that the Northern and Southern California 800 MHz Plans differ somewhat.

See the specific frequency details in the **TECHNICAL INFORMATION** segment of this Plan.

REGION-SPECIFIC CHANNELS

Note that in the frequency list that follows, some CLEMARS channels are restricted to use in certain geographic areas, due to conditions stipulated in licensing arrangements. These are listed in a discrete category, with numbers beginning at CLEMARS 20. At this time there are no channels between CLEMARS 9 and CLEMARS 20. As additional frequencies and bands become available for public safety use, the State will continue to develop CLEMARS capabilities in that spectrum.



TECHNICAL INFORMATION

The information that follows describes technical information as to equipment, frequency configurations and transmitting restrictions. *Note that authorization to transmit on one CLEMARS frequency does not imply authorization for other channels in the system. Applicants must specify the channel(s) requested. **Note also that frequencies have restrictions as to power, location, and usage.** Consult the Plan carefully before making applications.*

For agencies identifying radio channels by means of color codes, in the interest of uniformity, the State of California has identified these channels as the "Gold" Channels. This designation is appropriate only for those agencies utilizing the color code system. Other wise, they should be referred to as CLEMARS. In each case, the number of that particular channel should follow the identifying word, i.e., "Gold 2" or "CLEMARS 2".

Identifier	Frequency	Alternate Identifiers
<i>Statewide</i>		
CLEMARS 1	154.920 MHz Simplex	Gold 1/CLEMARS
CLEMARS 2	154.935 MHz Simplex	Gold 2/CLEMARS Tactical
CLEMARS 3	155.475 MHz Simplex	Gold 3/NALEMARS
CLEMARS 4	460.025 MHz Simplex	Gold 4/CLEMARS UHF Simplex
CLEMARS 5	460.025 MHz Repeat 465.025 MHz Input	Gold 5/CLEMARS UHF Repeat
CLEMARS 6	39.46 MHz Simplex	Gold 6/CLEMARS Low Band Simplex
CLEMARS 7	39.46 MHz Repeat 45.86 MHz Input	Gold 7/CLEMARS Low Band Repeat
CLEMARS 8	868.5125 MHz Simplex	Gold 8/CLEMARS 800 Simplex
CLEMARS 9	868.5125 MHz Repeat 823.5125 MHz Input	Gold 9/CLEMARS 800 Repeat
-----REGION-SPECIFIC CHANNELS-----		
CLEMARS 20	866.2000 MHz Simplex	Gold 20/CLEMARS North Simplex
CLEMARS 21	866.2000 MHz Repeat 821.2000 MHz Input	Gold 21/CLEMARS North Repeat
CLEMARS 22	484.2375 MHz Simplex	Gold 22/CLEMARS 480 – Los Angeles



*CTCSS Provisions Follow This Heading

Frequency Specifics

CLEMARS 1 - 154.920 MHz

Base/Mobile/Portable
CTCSS Optional*

This is the primary VHF frequency. This is a simplex channel. It can be used for all priorities.

CLEMARS 2 - 154.935 MHz

Portable
CTCSS Optional*

This is an additional CLEMARS VHF simplex frequency. **This channel is restricted to portable (hand held) use**, for radios with a **maximum of 10 watts** of output power. It is designed as an on-scene and command post channel. With similarly equipped portable radios, a dedicated tactical network can be employed to manage a command post/tactical incident. No base stations can be licensed on this channel. Those restrictions having been met, it can be used for all priority levels of traffic. *Due to the power restrictions involved, operations on this channel are almost always free of potential interference, enhancing effective tactical operations.*

CLEMARS 3 – 155.475 MHz

Base/Mobile/Portable
CTCSS Prohibited*

This is the National Law Enforcement Mutual Aid Radio System channel [NALEMARS]. It is a simplex channel, available for use in Priority 1 and 2 situations only. Due to adjacent channel use, base station licenses may not be available in certain areas. *Due to the restriction against low-priority use, the channel is usually free of traffic. Its use as a "hailing channel" by units on travel status should be considered. Base stations statewide are encouraged to monitor this channel.*

CLEMARS 4 – 460.025 MHz

Base/Mobile/Portable
CTCSS Optional*

This is a simplex channel in the UHF band. It may be used for traffic in any priority level.

CLEMARS 5 – 460.025 MHz/465.025 MHz

Repeater/Base/Mobile/Portable
CTCSS Optional*

This is the repeater pair for use of the UHF channels in a mobile relay system. It is available for use in all priorities.

*CTCSS = Continuous Tone Coded Squelch System



*CTCSS Provisions Follow This Heading
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CLEMARS 6 – 39.46 MHz

Base/Mobile/Portable
CTCSS Standard*

This is a simplex, low band VHF frequency. It can be used for all priorities.

CLEMARS 7 – 39.46 MHz/45.86 MHz

Repeater/Base/Mobile/Portable
CTCSS Standard*

This is the repeater pair for use in a low band VHF system. It may be used for traffic in any priority level.

CLEMARS 8 – 868.5125 MHz

Repeater/Base/Mobile/Portable
CTCSS Standard*

This is a simplex channel in the 800 MHz band. It may be used for traffic in all priority levels. Note the special licensing requirements listed in the 800 MHz section of this Plan.

CLEMARS 9 – 868.5125 MHz/823.5125 MHz

Base/Mobile/Portable
CTCSS Standard*

This is the repeater pair for use of the 800 MHz channel in a mobile relay system. It is available for traffic in all priority levels. Note the special licensing requirements listed in the 800 MHz section of this Plan.

CLEMARS 20 – 866.2000 MHz

Repeater/Base/Mobile/Portable
CTCSS Standard*

Due to special license restrictions, this channel is available only to agencies located north of (and including) the counties of Monterey, Kings, Tulare, and Inyo. This is a simplex channel, available for use in all priorities. Note the special licensing requirements listed in the 800 MHz section of this Plan.

CLEMARS 21 – 866.2000 MHz/821.2000 MHz

Repeater/Base/Mobile/Portable
CTCSS Standard*

Due to special license restrictions, these channels are available only to agencies located north of (and including) the counties of Monterey, Kings, Tulare, and Inyo. This is a repeater pair, available for use in all priorities. Note the special licensing requirements listed in the 800 MHz section of this Plan.



*CTCSS Provisions Follow This Heading
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CLEMARS 22 – 484.2375 MHz

Base/Mobile/Portable
CTCSS Mandatory

Due to special license restrictions, this simplex channel is available only to agencies with base stations located within 50 miles of Los Angeles City Hall (mobiles and portables within 80 miles). This channel is available for use under all priorities.

Types of Equipment

Portable	A hand-carried unit, known variously as a walkie-talkie, packset, handie-talkie or “HT”.
Mobile	A transceiver installed in a vehicle, boat, aircraft, etc.
Base Station	A permanent installation, operation from a fixed location.
Temporary Base Station	A station operating from a fixed location, for a temporary period, usually installed for a specific event, operation, etc.
Control Station	A permanent station transmitting and receiving on the mobile relay or “repeater” pairs listed with frequencies reversed.
Mobile Relay	A permanent installation operation from a fixed location, providing automatic relay of transmissions from control stations and mobile or portable units, usually mounted at an elevated site to extend transmitting range (also known as a repeater).

Use of Coded Squelch

Coded squelch, variously known by the abbreviation CTCSS, or trade names such as “PL” (Private Line) or “CG” (Channel Guard) is subject to specific conditions and restrictions. These are imposed in the interest of balancing interoperability needs with technical requirements required to maintain state-of-the-art. As such, the following definitions apply in this Plan:

CTCSS Prohibited	Use of code squelch is strictly prohibited at any time.
CTCSS Optional	Use of code squelch is optional. Local agency use of the channel utilizing coded squelch should cease on notification of higher-priority traffic need for the channel. <u>All radios so configured must be capable of having CTCSS disabled by the operator, to facilitate interagency activities.</u>



CTCSS Standard

At a minimum, all equipment operating on these channels should be equipped with coded squelch tone 156.7 Hz. Radios on these channels may use additional tones for the purposes of selecting individual mobile relay stations. If such an arrangement is utilized, provision must also be made for at least one site with wide area coverage to be activated by the 156.7 Hz tone (to ensure emergency assess by transient units) in addition to any other discrete tone(s).

CTCSS Mandatory

All equipment must transmit and receive 156.7 Hz tone. No other discrete tones are authorized.

Airborne Operation

The need for operation of CLEMARS-equipped radios in aircraft under certain conditions is recognized. Such operation will be in accordance with Part 90.423 of FCC rules. Personnel that operate from aerial platforms such as helicopters and patrol aircraft must be mindful of the extreme range their radios reach, due to their height above the terrain. As such, output power of such radios must not exceed 10 watts. In the 800 MHz channels, this limit is 1 watt. Even with these restrictions, operators are cautioned to carefully monitor the channel prior to transmitting, as their long range might impede operations already using the channel.

Power Limitations

On all channels, with all equipment, transmit power may not exceed 120 watts [ERP]. The exceptions, again, are airborne transmitters, which may not exceed 10 watts, with a 1 watt restriction on CLEMARS 7 through 10. (CLEMARS 2 operations are always restricted to 10 watts output power.)

Antenna Limitations

All base stations shall be located at low antenna levels, not to exceed specified heights above the elevation of the primary dispatch center:

- UHF 100 FT.
- VHF 500 Ft.
- 800 MHz See Regional 800 MHz Plan

This effectively prohibits “mountaintop” installations. Special circumstances may be delineated, which may lead to specific, one-site waivers, particularly in the cases where directional antennas are used. In such cases the CLEMARS Executive Committee will balance maximum channel availability for adjacent users and officer safety concerns to reach a decision. *Note that in cases where interference occurs, waivers can be withdrawn by the State.*



Mobile Relay Control Provisions

To prevent the possibility of system disruption by accidental or intentional capture of a mobile relay station by unwanted signals, mobile relays must be equipped with a positive means of disabling the relay function from the primary control position.

Voice Privacy

Speech scrambling, digital voice privacy [DVP], digital encryption [DES], inversion, and other forms of scrambling are not permitted on any CLEMARS channel.

Paging or Signaling

Tone or digital signaling, paging and/or alerting is not permitted on any CLEMARS channel. Simple alert tones [attention beeps] may be sounded prior to broadcasts. Automatic station identification is also permitted.

Data Transmission

Transmission of data is not permitted on CLEMARS channels.

Permissible Communications

All communications on the CLEMARS frequencies will be in accordance with Part 90, Subpart B of FCC Regulations (Public Safety Radio Pool). In addition, CLEMARS participants are to transmit communications essential to official police activities of the licensee. Transmissions of unofficial communications are not authorized and may result in revocation of licensee authorization.

Point-to-Point Communications

CLEMARS frequencies are designed for use as base to mobile/portable and mobile/portable to mobile/portable channels. Base to base communications are prohibited. *The only permissible exceptions would involve transmission of emergency information directly affecting officer or public safety.* The California Law Enforcement Radio System {CLERS} is specifically designed to provide reliable, repeated point to point communication between law enforcement dispatch centers or offices.

FCC Call Sign Announcements

All stations must identify in accordance with FCC Rules and Regulations. Each station or system must be identified by transmission of its callsign:

- During each transmission, or exchange of transmissions, or
- Once each 30 minutes during periods of continuous operation



The call sign is the FCC-assigned set of letters and numbers found on the license authorization. Mobiles and Portables must identify with their agency assigned unit or officer number. Again, violations can result in revocation of the operating authority for the offending agency.

Temporary Base Station/Temporary Mobile Relay

An agency participating in CLEMARS may, upon receipt of permission from OES, operate temporary base stations and/or mobile relays to handle Priority 1,2,3 or 3a traffic, as needed. Such temporary authorization will not be issued for a period exceeding 15 days. To request authorization, submit a written request, specifying the dates, frequencies and situation involved, to the OES Law Enforcement Branch. This request may be sent via teletype to "OES".

Cross-Band Operation

In the event of a public safety emergency of a Priority 1 or 2 nature, and in keeping with appropriate FCC Rules, other systems may be cross-banded into a CLEMARS channel through automatic or manual equipment. This should be temporary in nature, and must be discontinued at the termination of the occurrence, which requires its use. The same rules may apply to cross banding between various CLEMARS channels. *Agencies designing radio systems should consider including this capability, particularly when adjacent agencies are on different bands and CLEMARS channels.* **Contact OES for special coordination information.**

Exceptions and Deviations

The technical standards incorporated into the CLEMARS Plan are designed specifically to preserve the integrity and reliability of the system, while encouraging maximum use of the available channels. While applicants are expected to meet these requirements, it is understood that in extraordinary cases there may be circumstances that require deviation from these regulations. All such circumstances should be brought to the attention of OES at the time authorization is requested. A complete and thorough description of the situation involved should be included in writing, as well as a justification for the action requested. OES, with the advice and counsel of the CLEMARS Executive Committee, will serve as the final decision point in such cases. In these circumstances, the two guiding points will be:

- Will the exception contribute positively to officer and public safety?
- Will the exception in any way degrade the integrity of the system or cause interference to other users?



Frequency Protection

In order to best protect the effectiveness of channels in CLEMARS, it is the intent of the State of California to seek “protection” for adjacent channels wherever possible. As such, similar to that currently in effect for CLEMARS 1, the State will seek to reserve adjacent “offset” frequencies and frequency pairs.

There are known adjacent channel interference problems, which must be considered during planning, and execution of mutual aid activities. For example, the California Highway Patrol (CHP) uses the frequency 154.905 MHz for its statewide vehicular repeater system. Such use means that virtually every CHP vehicle has a low power transmitter on this frequency. All CHP field personnel use this frequency to communicate between their personal portable radio and their vehicle, in which their transmission is automatically relayed onto one of the DHP operational low band channels. Adjacent channel interference will occur between 154.905 MHz and 154.920 MHz (CLEMARS 1) when used in close proximity on the same or nearby incidents.

Adjacent channel interference will also occur between 154.920 MHz (CLEMARS 1) and 154.935 MHz (CLEMARS 2) when used in close proximity. While less probable, it is even possible that interference may result between 154.905 MHz (CHP Repeater Channel) and 154.935 MHz (CLEMARS 2), when used in close proximity.

This information is provided to alert planning and operations personnel to this known interference potential. Options should be considered to limit use of one of the adjacent channels during mutual aid activities. For example, most CHP portable radios are equipped with CLEMARS 1, 2 and 3, which may provide a means to limit use of the 154.905 MHz frequency during an event.

Additional information and suggestions for limiting interference during a specific operation or incident can be accessed by calling the OES Telecommunications Branch at (916) 845-8630.



COMPLAINT PROCEDURE

OES Law Enforcement and Telecommunications personnel routinely monitor the CLEMARS frequencies. Beyond that, a procedure exists for receiving complaints from any system user alleging interference or improper operating procedures on the part of any other system user. The purpose of this procedure is to provide an official means of reporting harmful interference or system misuse, in cases where such interference or misuse is in any way detrimental to officer safety or management of an emergency incident.

Misuse, for the purposes of this Plan, can be defined as any operation that fails to follow the procedures outlined herein, or any operation that causes interference to other users. Additionally, any operation that violates FCC Regulations 90.20 and/or 90.405 constitutes misuse.

Any agency experiencing willful interference or monitoring improper use of the system should attempt to identify the offending station and contact the chief executive of that department. If this fails to correct the problem, the official reporting process listed below should be followed:

- The agency reporting such interference or misuse sends a letter, on official agency letterhead, to the OES Law Enforcement Branch, Post Office Box 419047, Rancho Cordova, CA 95741-9047. The letter should include, at a minimum:
 - The date and time of the problem
 - The circumstances regarding the interference or misuse
 - Information detailing how the misuse interfered with operations or safety, if appropriate
 - Identification or call signs, locations, etc. that would lead to the location or agency responsible for the interference or misuse

Audio logging tapes of the situation and misuse are extremely valuable in such cases, and tape cassettes or digital files of these audio segments are requested. They should be sent with the complaint letter. [If requested, OES will return the tape after its investigation.]

On receipt of such a complaint, OES will investigate the situation to the extent possible. If the substance of the complaint involves primarily operating procedure violations, the OES Law Enforcement Branch will handle the investigation. In cases where the violations are primarily technical, OES Telecommunications will handle follow-up. In many cases, both Branches will work together on these cases.

Information compiled through the complaint, tapes and investigation may lead to system disciplinary actions ranging from verbal or written warnings, up to and including revocation of operating authorization.



COMMON OPERATING VIOLATIONS CLEMARS AND NALEMARS FREQUENCIES

- √ **FAILURE TO UNDERSTAND AND OBEY PRIORITIES**
The CLEMARS Plan details four levels of priority operation. Some users fail to observe these rules.
- √ **USE AS A PRIMARY DISPATCH OR INQUIRY CHANNEL**
Use for these types of transmissions is restricted to short-term situations. Such use on a day-to-day basis is not consistent with CLEMARS operating philosophy.
- √ **FAILURE TO IDENTIFY**
FCC regulations and the CLEMARS Plan require units to use their full agency unit designator, and stations to use their FCC call-sign.
- √ **FAILURE TO USE UNIVERSAL CODES OR CLEAR TEXT**
Each agency has different interpretations of radio codes. Avoid use of all but the most common codes.
- √ **FAILURE TO MONITOR PRIOR TO TRANSMITTING**
When switching to CLEMARS/NALEMARS, monitor before transmitting to avoid covering other units that may also be using the channel.
- √ **USE OF SCRAMBLING**
Scrambling is not permitted on CLEMARS channels.
- √ **IMPROPER USE OF CODED SQUELCH**
The CLEMARS Plan details appropriate use of tone or digital coded squelch.
- √ **POOR OPERATION PRECEDURES**
Officer safety could be hindered by use of the channels for unauthorized or unprofessional transmissions.



CLEMARS

**California Law Enforcement
Mutual Aid Radio System**

SYSTEM PRIORITIES

There are, established in the CLEMARS Plan, four priority levels for use of the system. In each case, traffic of a higher priority level must be given use of the channel, with agencies utilizing it for lower priority traffic yielding the frequency immediately.

- | | |
|-------------|---|
| Priority 1 | Disaster and extreme emergency operations for mutual aid and interagency communications |
| Priority 2 | Emergency or urgent operations involving imminent danger to the safety of life or property |
| Priority 3 | Special event control activities, generally of a preplanned nature, and generally involving joint participation of two or more agencies |
| Priority 3a | Drills, tests and exercises |
| Priority 4 | Single agency secondary communications |

Agencies must inform other area user agencies when they are involved in high priority usage of CLEMARS channels. A broadcast should be made on CLEMARS as to restrictions on their use of the channel. Additional notifications might take any of three forms:

- Teletype message to adjoining CLEMARS users*
- Notification via CLERS (point to point radio system)**
- Telephone calls to area frequent users

In all cases where a teletype is sent, a courtesy copy to mnemonic "OES" in Sacramento is appreciated.

* Consider use of the CLETS User Group Notification System

** This system has been modernized and upgraded in many areas of the state for use as a dispatcher's "hotline" net



CLEMARS

**California Law Enforcement
Mutual Aid Radio System**

SAMPLE CLETS TELETYPE RE: CLEMARS RESTRICTION

N 013 CLA LAV AZU GDA OES
ATTN: VALLEY POLICE AGENCIES

EFFECTIVE 0600 PDT ON NOVEMBER 4, 2003, THE POMONA POLICE DEPARTMENT REQUESTS A RESTRICTION ON CLEMARS 1, 154.920 MHZ.

POMONA PD AND ALLIED AGENCIES WILL CONDUCT PRIORITY 2 EMERGENCY COMMUNICATIONS RELATED TO GANG TASK FORCE ACTIVITIES.

THIS RESTRICTION WILL BE LIFTED AT 1800 PDT ON THE SAME DATE.

REFER: WATCH COMMANDER (909) 611-1111
PD POMONA CALIFORNIA